

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the matter of )  
 ) PR Docket No. 93-61  
Amendment of Part 90 of the )  
Commission's Rules to Adopt )  
Regulations for Automatic Vehicle )  
Monitoring Systems )  
 )  
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To: The Commission )

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PETITION FOR RECONSIDERATION

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## SUMMARY

Rather than eliminating uncertainty, the rules promulgated by the Report and Order ("R&O") amplify uncertainty for the divergent interests who currently occupy the 902-928 MHz band. The rules perpetuate existing conflicts while spawning new ones that would be pre-empted by more reasoned regulation. By stimulating uncertainty while intensifying conflicts, the R&O's permanent framework for LMS is destined to curtail innovation, investment and growth in this industry. For these reasons and others articulated in the following discussion, the FCC should reconsider and revise the R&O.

Specifically, the Commission should redress the R&O's following errors: (i) authorizing sharing of the 2 MHz D band by multilateration and non-multilateration interests; (ii) failing to adopt a spectrally efficient multilateration allocation plan based upon small building blocks; (iii) conditioning final multilateration licensed grants on post-grant testing that demonstrates non-interference to Part 15 devices; (iv) presuming, irrebuttably, that Part 15 devices are non-interfering; (v) defining "store and forward" interconnection ambiguously and failing to relate that definition to the ban on real-time voice interconnection; (vi) designing Major Trading Areas ("MTAs") as the relevant geographic market for licensing purposes; (vii) grandfathering unbuilt licenses; (viii) grandfathering pre-February 3, 1995 modification applications, but not applications for new facilities filed prior to that date; (ix) inadequately explaining permissible use; (x) failing to apply the same emission mask to all systems at the boundary of their licensed area; and (xi) failing to establish a procedure for resolving of interference between exclusive MTA and grandfathered multilateration licensees.

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To: The Commission

**PETITION FOR RECONSIDERATION**

Southwestern Bell Mobile Systems, Inc. ("SBMS"), by its attorneys and pursuant to Section 1.429 of the Commission's Rules,<sup>1/</sup> hereby submits its Petition for Reconsideration of the Report and Order ("R&O") in the above-reference proceeding.<sup>2/</sup>

**I. Introductory Statement**

1. Prior to the R&O, AVM was regulated according to an "interim" framework whose constituent rules were according to the Commission, inherently vague and antagonistic to "development of and investment in AVM technology."<sup>3/</sup> In establishing a permanent regulatory regime for LMS, the Commission, by negative inference, must be striving for the status quo's polar opposite -- i.e., rules that are concise, well-defined and promote substantial industry growth and development.

2. The rules promulgated by the R&O subvert these objectives. Rather than eliminate uncertainty, the new rules amplify it. Instead of harmonizing divergent interests, the rules perpetuate existing conflicts while spawning new ones that would be pre-empted by more reasoned regulation. By stimulating uncertainty while intensifying conflicts, the R&O's

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<sup>1/</sup> 47 C.F.R. §1.429.

<sup>2/</sup> PR Docket No. 93-61, FCC 95-41 (rel. Feb. 6, 1995).

<sup>3/</sup> Notice of Proposed Rulemaking in Docket 93-61, 8 FCC Rcd 2502, 2503 (1993) ("NPRM").

permanent framework for LMS is destined to curtail innovation, investment and growth in this industry. For these reasons and others articulated in the following discussion, the FCC should reconsider and revise the R&O.<sup>4/</sup>

3. Specifically, the Commission should redress the R&O's following errors: (i) authorizing sharing of the 2 MHz D band by multilateration and non-multilateration interests; (ii) failing to adopt a spectrally efficient multilateration allocation plan based upon small building blocks; (iii) conditioning final multilateration licensed grants on post-grant testing that demonstrates non-interference to Part 15 devices; (iv) presuming, irrebuttably, that Part 15 devices are non-interfering; (v) defining "store and forward" interconnection ambiguously and failing to relate that definition to the ban on real-time voice interconnection; (vi) designing Major Trading Areas ("MTAs") as the relevant geographic market for licensing purposes; (vii) grandfathering unbuilt licenses; (viii) grandfathering pre-February 3, 1995 modification applications, but not applications for new facilities filed prior to that date; (ix) inadequately explaining permissible use; (x) failing to apply the same emission mask to all systems at the boundary of their licensed area; and (xi) failing to establish a procedure for resolving of interference between exclusive MTA and grandfathered multilateration licensees. In view of the above errors, it certainly appears that the FCC's guiding principle was that "ANY decision is better than NO decision."<sup>5/</sup>

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<sup>4/</sup> SBMS also requests that the FCC expeditiously issue a notice of proposed rulemaking to establish LMS auction procedures to ensure that this spectrum is rapidly allocated to prospective service providers. See Amendment of Parts 22 and 90 of the Comm'n's Rules to Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-940 MHz Bands Allotted to the Specialized Mobile Radio Pool, PD Docket Nos. 89-553, 93-253, GN Docket No. 93-252, FCC 95-159 (rel. April 17, 1995) (adopting final service rules and proposing auction rules at the same time in order to provide expeditious service).

<sup>5/</sup> R&O, Concurring Statement of Commissioner Quello at 2.

4. An agency is statutorily precluded from acting in a manner which is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."<sup>6/</sup> Under this standard, an agency decision is credited with a "presumption of regularity."<sup>7/</sup> Nevertheless, if an agency action frustrates congressional goals, or fails to meet statutory, procedural or constitutional requirements, it must be reversed as unreasonable.<sup>8/</sup> To determine whether an agency has engaged in reasoned decision making, a reviewing court examines whether the agency: considered meaningful alternatives; provided a reasonable explication of the choice made; and; demonstrated a reasonable connection between the facts found and the option selected.<sup>9/</sup> Stated simply, these hallmarks of reasoned decision making are absent from the R&O. That document is bereft of evidence that the Commission considered "meaningful alternatives" to the choices made. Nor does it demonstrate any nexus, let alone a reasonable one, between the facts found and the options selected. Indeed, in one significant instance, the option selected is flatly contradicted by the Commission's own fact finding.

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<sup>6/</sup> Administrative Procedure Act, 5 U.S.C. § 706(2)(A) ("APA"). Administrative action is unreasonable, i.e., arbitrary and capricious, if it:

relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise. Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins. Co., 463 U.S. 29, 43 (1983) ("MVMA").

<sup>7/</sup> Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 415 (1971), on remand, 335 F.Supp. 873 (W.D. Tenn. 1972), supplemental op., 357 F.Supp. 846 (W.D. 1973), rev'd, 494 F.2d 1212 (6th Cir. Tenn. 1974), cert. den., 421 U.S. 991 (1975).

<sup>8/</sup> Ford Motor Credit Corp. v. Milhollin, 444 U.S. 555 (1980), on remand, 618 F.2d 623 (9th Cir. 1980), on remand, 531 F.Supp. 379 (D.Or.1981); Skidmore v. Swift and Co., 323 U.S. 134, 140 (1944); Continental Air Lines v. DOT, 843 F.2d 1444, 1453 (D.C. Cir. 1988) ("Continental Air Lines"); Motor Vehicle Mfrs. Ass'n v. Ruckelshaus, 719 F.2d 1159, 1164 (D.C. Cir. 1983).

<sup>9/</sup> Continental Air Lines, 843 F.2d at 1451.

II. Sharing Of Band D Between Multilateration and Non-Multilateration Licensees Contradicts The Commission's Own Findings

5. The R&O's designation of Band D (919.750-921.750 MHz) for sharing between multilateration and non-multilateration systems is completely implausible. Rather than reflecting "agency expertise," this designation refutes that expertise because it is irreconcilable with the FCC's own findings concerning spectrum sharing between these two types of LMS systems. The NPRM stated directly "that wide-band pulse-ranging systems have [difficulties] co-existing with narrow-band systems" and therefore proposed separate spectrum allocations for these two system types.<sup>10/</sup> The R&O consistently concluded that exclusive multilateration spectrum was justified on technical, operational and economic grounds, and that effective development of multilateration and non multilateration systems required separate bandwidth for each. R&O at 27. Notwithstanding the unequivocal Commission criticisms of multilateration/non-multilateration sharing, the R&O (at 27, 37), mandates precisely this sharing in the D band. By imposing this requirement, the R&O violates an essential component of reasoned decision making because there is no connection, reasonable or otherwise, between the facts found and the option selected. Indeed, the option that ensues most logically from the record findings here, exclusive spectrum assignments for multilateration and non-multilateration alike, is the exact opposite of the R&O's ultimate determination for band D.<sup>11/</sup>

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<sup>10/</sup> NPRM, 8 FCC Rcd at 2505.

<sup>11/</sup> Designating band D for inter-system sharing is an apparent accommodation to a single non-multilateration commenter's demand for spectrum exceeding 10 MHz. See Amtech Comments (Aug. 12, 1994), at 2. SBMS respectfully submits that Amtech has never proven that an actual need exists for such an enormous quantity of contiguous bandwidth.

III. The Allocation Plan For Multilateration Systems Is Unworkable And Has No Logical Basis

6. The multilateration spectrum allocation finally devised in the R&O -- three separate bands (B, D and E) of 5.75, 2.00 and 5.50 MHz,<sup>12/</sup> respectively -- reflects no unifying logic and promotes no objective articulated by the Commission. To the extent its derivation can be surmised, the Commission apparently aspired to reconcile the proposals of this proceeding's most prominent multilateration interests -- notwithstanding the vast divergence in their respective views. The result is an allocation based on neither principle nor policy, but a misguided attempt to satisfy, however slightly, everyone.

7. Alone among the major multilateration players, SBMS's response to the Commission's inquiry regarding the optimal spectrum allocation plan for multilateration systems was designed to: preserve scarce spectrum; promote economic efficiency; and accelerate availability of AVM service.<sup>13/</sup> Achieving these objectives compelled SBMS's recommendation of an auction scheme characterized by:

- offering reverse link spectrum in discrete two MHz increments;
- granting auction winners free alienability of bandwidth they acquire; and
- allowing participants to acquire multiple two MHz blocks in any particular market.<sup>14/</sup>

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<sup>12/</sup> R&O at 28.

<sup>13/</sup> SBMS Ex Parte Comments (Nov. 9, 1994).

<sup>14/</sup> SBMS demonstrated that its Quiktrak system was capable of full service within 2 MHz, and suggested building blocks of that size. See, e.g., SBMS Letter to William F. Caton (Aug. 12, 1994), at 5; SBMS Reply Comments, Rainer Declaration, 6-7, n.6 (March 29, 1994) (stating that additional bandwidth is not necessary for improving location capacity, accuracy or interference rejection). Also, to disprove the allegations that SBMS' system is less functional or less robust than Teletrac's 3.87 MHz system or MobileVision's 4 MHz system, the FCC was invited to visit Chicago, the only city where all three systems exist. Had the FCC accepted this invitation, it would have seen, without a doubt, that 2 MHz is the appropriate building block for

8. As SBMS demonstrated, an allocation plan with these characteristics will: deter warehousing;<sup>15/</sup> promote competition; reward service providers employing spectrally efficient technologies with lower sunk costs; and reward consumers with lower costs.<sup>16/</sup> No other allocation plan entered into this docket's record offer these consumer welfare advantages.

9. Rather than accept SBMS's proposal in whole or substantial part, or provide a reasoned explanation for its rejection, the R&O seizes on one aspect thereof (i.e., two MHz spectrum blocks), wrenches it completely out of context, and grafts it unnaturally onto the other, similarly illogical aspects of the ultimate plan, Block B and E. Make no mistake, this attempt at compromise, derived by combining bits of each proposal into an anomalous patsche, will satisfy no party and, more importantly, will resolve none of the critical consumer welfare issues raised by this proceeding. Thus, the R&O allocation scheme neither deters frequency stockpiling nor rewards innovators of spectrally concise technology; it will stymie competition while providing no incentive for rapid deployment of systems and service. This result cannot be harmonized with the attributes of reasoned decision making; accordingly, the allocation scheme

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multilateration systems.

<sup>15/</sup> Small spectrum increments promote efficiency by minimizing the occurrence of fallow spectrum. If reverse link LMS spectrum were auctioned in increments of four MHz, then systems requiring two, six or ten MHz of bandwidth would each idle two MHz of scarce spectrum. By contrast, if the bidding increment were two MHz, no bandwidth would be rendered fallow and the number of service providers might increase. If the Commission deemed it appropriate, it could have considered a spectrum cap to assure that there were opportunities for at least two market entrants. See SBMS Letter to William F. Caton (Aug. 12, 1994), at 5.

<sup>16/</sup> By offering LMS bandwidth in discrete packets of 2 MHz each, the Commission would confer on prospective operators deploying spectrally efficient technologies a substantial advantage in start-up costs which can be dispensed to consumers in the form of lower rates. See, e.g., SBMS Letter to William F. Caton (Aug. 12, 1994).

should be reversed on reconsideration.<sup>17/</sup>

#### IV. The New LMS Rules Impermissibly Amend Part 15

10. In adopting the LMS Rules, the Commission affirmed that:

unlicensed Part 15 devices in the 902-928 MHz band, as in any other band, may not cause harmful interference to and must accept interference from all other operations in the band; persons operating unlicensed Part 15 devices have no vested or recognizable right to continued use of any given frequency; and finally an operator of an unlicensed Part 15 device is required to cease operations upon notification by a Commission representative that the device is causing harmful interference. R&O at 20.<sup>18/</sup>

Nevertheless, final grant of all multilateration LMS licenses will now be conditioned on the "licensee's ability to demonstrate through actual field tests that their systems do not cause unacceptable levels of interference to Part 15 devices." R&O at 43.<sup>19/</sup> By imposing this testing requirement, the R&O fundamentally changes Part 15 of the Rules and the corresponding principle that Part 15 devices are entitled to no special interference protection. To implement a fundamental change to Part 15 (as the testing condition purports to do), the Commission must

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<sup>17/</sup> In a Pinpoint Comms., Inc. Letter to William F. Caton (Jan. 19, 1994), Pinpoint criticized SBMS for allegedly inflating its capacity. SBMS originally identified the capacity of its system at 60,000 locations per hour, but indicated that it was developing a way to double its capacity. SBMS Reply Comments (July 29, 1993), at 24. As SBMS previously explained, SBMS Letter to William F. Caton (Jan. 19, 1995), Appendix A, at 2, a redoubling of that capacity would yield over 260,000 locations per hour (based on a base capacity of 65,000 locations per hour because of revisions in the mix of messaging and locating signals), because of the availability of additional spectrum for narrowband control channels. Throughout this proceeding, SBMS has repeatedly demonstrated that it is spectrally efficient and that its system uses the least amount of bandwidth of any of the current multilateration LMS licensees. Yet the Commission clearly ignored this by (1) adopting a building block plan that virtually ensures inefficient utilization and (2) designating the only 2 MHz block on a shared basis.

<sup>18/</sup> See 47 C.F.R. §15.5. In addition, in Amendment of Parts 15 and 90 of the Commission's Rules to Provide Additional Frequencies for Cordless Telephones, ET Docket No. 93-235, FCC 95-148 (rel. April 10, 1995), the FCC tripled the amount of spectrum and number of frequencies available for cordless telephones in the 44-49 MHz bands.

<sup>19/</sup> See 47 C.F.R. 90.353(d).

give notice and provide opportunity for public comment, as required by the APA. SBMS respectfully submits that an NPRM devoted to revamping interim AVM rules under Part 90 provides scant, if any, notice of a sweeping change to Part 15. Accordingly, the testing requirement is ultra vires.<sup>20/</sup> As this excerpt makes plain, Part 15 devices use the 902-928 MHz band "as is." Assuming, arguendo, that compulsory testing was within the Commission's power, record evidence demonstrates that the probability of interference to Part 15 devices is de minimis.<sup>21/</sup> Again the R&O, fails to provide a reasonable connection between the facts found and the option selected. Equally disconcerting, implementation of compulsory testing is not discussed in the R&O; thus, the kinds of tests that will be required; standards that will be employed; and enforcement of results remain a complete mystery. As a result, auction winners will risk substantial capital to acquire conditional licenses and construct systems without any idea if they can satisfy the final obstacle to commercial operation. Injecting this magnitude of uncertainty into the regulatory process is bound to constrict potential entry thereby depriving the

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<sup>20/</sup> "Agency notice must describe the range of alternatives being considered with reasonable specificity. Otherwise, interested parties will not know what to comment on, and notice will not lead to better informed decision making." Small Refiner Lead Phase-Down Task Force v. EPA, 705 F.2d 506, 549 (D.C. Cir. 1983) ("Small Refiner"). Adequate notice has only been given to interested parties where "the content of the agency's final rule is a 'logical outgrowth' of its rulemaking proposal." Aeronautical Radio v. FCC, 928 F.2d 428, 446 (D.C. Cir. 1991). Rules are a logical outgrowth if the party "ex ante, should have anticipated that such a requirement might be imposed." Id. Congress did not intend for a party to have to "scrutinize the record [*i.e.*, comments] for notice of issues that the agency did not raise itself." Small Refiner, 705 F.2d at 550. See also, Teletrac Letter to William F. Caton (May 23, 1994), attachment at 1-2 ("It is beyond the scope of PR Docket 93-61 to revise the Part 15 rules by eliminating the requirement that Part 15 devices must not cause harmful interference"); Teletrac Reply Comments (July 29, 1993), at 36-39.

<sup>21/</sup> "Capacity and Interference Resistance of Spread-Spectrum Automatic Vehicle Monitoring Systems in the 902-928 MHz ISM Band, Final Report, " by Raymond Zhen, Jay Tsai, Rick Cameron, Lara Beisgen, Brian D. Woerner, and Jeff H. Reed, Mobile and Portable Research Group, Bradley Dept. of Electrical Engineering, Virginia Tech, Oct. 14, 1994, at 13 ("Virginia Tech Final Report"). The Virginia Tech Final Report was the only independent technical report submitted in the proceeding. See SBMS Ex Parte Comments (Oct. 14, 1994).

public the benefits of a robust auction and a fully competitive LMS market.

11. The R&O also established an irrebuttable presumption of non-interference to LMS systems by Part 15 devices under certain conditions; R&O at 21-24; even though these devices are secondary to LMS.<sup>22/</sup> Again, this collateral rewrite of Part 15 in this proceeding is ultra vires. An irrebuttable presumption of non-interference burdens LMS auction participants with additional uncertainty making spectrum valuation (and, hence, informed bidding) impossible. Comparatively recent Part 15 products like wide-area networks and long-range cordless phones cannot be assessed today with respect to long range, long term effects on LMS operations. The aggregate noise level from the Part 15 devices that are presumably non-interfering may be enough to hamper LMS operations, but LMS licensees will have no forum to resolve that interference as a result of a theoretical legal presumption. Thus, LMS licensees will have to accept a degraded channel environment or invest more money to modify their systems.

12. To avoid this prejudice to LMS, SBMS urges the Commission to adopt a rebuttable presumption of non-interference by Part 15 devices, whereby if actual interference is demonstrated, the Part 15 device must cease operations until such interference can be eliminated. Consistent with Part 15, a rebuttable presumption will permit Part 15 devices to operate, while protecting LMS from actual interference.<sup>23/</sup>

V. Sanctioning "Store and Forward" Interconnection, Unless Narrowly Defined, Will Eviscerate the Voice Service Ban

13. Rejecting interconnected voice service as a component of LMS, on the one hand,

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<sup>22/</sup> See 47 C.F.R. §15.5(b).

<sup>23/</sup> In this regard, on reconsideration, the Commission should revisit its disparate treatment of non-multilateration and multilateration systems vis-a-vis Part 15 interests. There is no technical reason why 30 watts ERP transmitted by a non-multilateration system has less potential to interfere with Part 15 devices than the 30 watts ERP permitted by the mobile component of a multilateration system.

while authorizing "store and forward" interconnection, on the other, represents an irreconcilable conflict within the R&O text. Absent a narrow definition of "store and forward," the R&O's prohibition against LMS voice service is likely to prove illusory. Notably, "store and forward" is never defined in the R&O.

14. In digital cellular systems, for example, transmitted voice communications are "stored" for an instant when digitized and then "forwarded" to the recipient for reassembly. A digital cellular conversation may technically satisfy the requirements of "store and forward" even though any delay to the conversants is, in fact, imperceptible. Thus, by failing to define "store and forward" narrowly, the prohibition against interconnected voice service is rendered meaningless.

15. By contrast, the Commission previously defined "store and forward" in terms of true storage of voice or data messages for subsequent retrieval by the recipient.<sup>24/</sup> In one proceeding, the Commission described "store and forward" transmission as constituting two calls-- "one to the store-and-forward facilities [for storage], and a second from these facilities to the destination."<sup>25/</sup> In a more recent analysis, a store and forward paging terminal was characterized as providing "no 'real time' link through the telephone network between the sender and the receiver of the paging message."<sup>26/</sup> Traditionally, "store and forward" has been defined by the communications industry as a "system in which messages received at intermediate routing

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<sup>24/</sup> Amendment of Section 64.702 of the Commn's Rules and Regulations, Final Decision, 77 FCC 2d 384, 420-421 (1980).

<sup>25/</sup> Interconnection Arrangements Between and Among Domestic and Int'l Record Carriers: Store and Forward and TWX/Telex Conversion, Mem. Op. and Interim Order, 93 FCC 2d 159, 162 (1983).

<sup>26/</sup> Implementation of Sections 3(n) and 332 of the Comm. Act, Regulatory Treatment of Mobile Services, Notice of Proposed Rulemaking, 8 FCC Rcd 7988, 7992 (1993).

points are recorded for later transmission...The handling of messages or packets completely into storage, then sending them forward...technique that accepts messages or transactions, stores them until they are validated and complete, and then forwards them..."<sup>27/</sup> Had the R&O defined "store and forward" in these terms, then this technical feature and the prohibition against voice service could co-exist without conflict. By omitting the definition, the R&O will eviscerate the voice service ban.<sup>28/</sup>

16. Permitting lengthy conversations on LMS spectrum will increase the probability of harmful interference with Part 15 devices and with other LMS systems, including interference between multilateration and non-multilateration forced to share the D band. Ironically, the R&O specifically limited interconnected use so as not to "increase the potential for harmful interference to other users of the band." R&O at 14. Absent a narrow definition of "store and forward" as SBMS recommends, the interference level will increase, making operation by other services even more difficult.

VI. The Record Shows That MTAs Are Not The Appropriate Geographic Areas For Exclusive LMS Licenses

17. While agreeing with the "view that the geographic scope of LMS systems logically correlates to areas in which there are centers of consumption of durable goods," the R&O (at 30) concludes that these "centers" are best represented by MTAs. MTAs, however, actually are derived by aggregating these "centers," which often are geographically dispersed from one another. The parties in this proceeding and the FCC (at least initially),<sup>29/</sup> advocated geographic

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<sup>27/</sup> Modern Dictionary of Electronics, Rudolf F. Graf (6th Ed.), at 980-981.

<sup>28/</sup> The LMS voice service advocates clearly intend such evisceration. See MobileVision Letter to William F. Caton (Dec. 14, 1994), at 2.

<sup>29/</sup> Public Notice, DA 94-129, PR Docket No. 93-61 (Feb. 15, 1994) (suggesting BTAs as the geographic area).

areas smaller than MTAs.<sup>30/</sup>

18. The FCC justified its change of mind with no reference to record evidence, nor does the R&O refute the logic of those parties who advocated smaller market areas. Rather, the R&O selected the MTA option because "LMS has the potential to serve larger areas" (R&O at 30), even though these "centers" are better defined as BTAs. In addition, LMS build-out requirements are BTA based, not MTA based. R&O at 33.

19. The specter of undefined field tests as a condition precedent to final licensing (R&O at 43), and the minimal build-out requirements of only a "substantial portion of at least one BTA" per MTA within twelve months after initial authorization, R&O at 33, may deter availability of service while encouraging frequency stockpiling. An LMS operator could build-out a system in a rural BTA where "minimized interference" is clearly demonstrated (R&O at 43), thereby fulfilling its construction requirement. It could then retain the license in perpetuity, because the R&O imposes no additional construction requirements. As a result, an operator would serve a low demand rural area while substantially neglecting urban BTAs without market or regulatory risk.

20. Under the interim framework, at least one incumbent multilateration LMS licensee has built only skeletal systems while LMS licensees generally have built very few mature systems despite hundreds of outstanding licenses with extended construction schedules.<sup>31/</sup> If past is prologue, warehousing should be a more pressing policy concern. Nevertheless, use of MTAs for

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<sup>30/</sup> R&O at 29-30. Teletrac and Symbol Technologies suggested BTAs. PacTel Teletrac Comments (March 15, 1994), at 8; Symbol Technologies, Inc. Comments in Response to the Public Notice (Feb. 9, 1994), at 7-8, n.9. Pinpoint and MobileVision suggested MSAs/RSAs. Pinpoint Comments (March 15, 1994), at 32; MobileVision Comments (March 15, 1994), at 27-28. See also, e.g., SBMS Letter to William F. Caton (Aug. 26, 1994), Attachment at 7 ("MTAs are too large for licensing areas").

<sup>31/</sup> See, e.g., SBMS Letter to Ralph Haller (Aug. 12, 1994), at 8.

exclusive licensing, combined with timid construction requirements and the burden of conditional testing will only serve to encourage warehousing,<sup>32/</sup> depriving the public of needed service.

#### VII. The Commission Should Reconsider Its Grandfathering Scheme

21. SBMS demonstrated throughout this proceeding that grandfathering unbuilt AVM licenses disserves the public interest.<sup>33/</sup> Grandfathering undermines the potential benefits of competitive bidding, while promoting spectrum warehousing in direct contravention of law and policy.<sup>34/</sup> Grandfathering will reduce the amount of spectrum that can be auctioned while making it more difficult for a bidder to value the spectrum it seeks to acquire. Finally, the imposition of grandfathering can hardly be characterized as reasoned decision making; there is no connection between record evidence and the Commission's selection of this option.

##### A. Grandfathering Unbuilt Licenses Will Subvert LMS Auctions While Encouraging Warehousing

22. Permitting existing AVM systems to request greater bandwidth than currently required and allowing them to choose which new bands to inhabit, while not requiring any payment, gives them great incentive to request as much spectrum as possible, whether or not they legitimately need it, to avoid the costs of auctions. Non-multilateration systems are limited to the "minimum

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<sup>32/</sup> See, e.g., SBMS Ex Parte Comments (Nov. 9, 1994), at 12-13.

<sup>33/</sup> See, e.g., SBMS Letter to Ralph A. Haller (Aug. 12, 1994), at 10-11 (suggesting cancellation of unbuilt licenses and imposition of a one year period during which constructed systems transition to the new rules as both would discourage warehousing); SBMS Comments (June 29, 1993), at 17-21; Metricom, Inc. Ex Parte Comments (Sept. 2, 1994), at 4-5.

<sup>34/</sup> At last count, the record showed that Teletrac has 240 licenses granted since 1989, but built only 6. MobileVision had 150+ licenses, granted since mid-1990 but built only three skeletal systems and no commercial systems. Uniplex and Pinpoint have many licenses but built none. Although each is currently authorized to operate on 8 MHz, Teletrac only uses 3.87 MHz and MobileVision only uses 4 MHz for location purposes. See, e.g., SBMS Letter to William F. Caton (Aug. 26, 1994), Attachment at 4. These are clear examples of warehousing and denial of service to the public.

amount of bandwidth necessary to meet their operational needs," R&O at 47, but multilateration licenses are not similarly limited. The R&O provides no reasoned explanation for this disparate treatment.

23. The Commission found that auctioning multilateration LMS licenses will further the public interest because it will:

speed the development and deployment of new services to the public with minimal administrative or judicial delays ...encourages efficient use of the spectrum...promote access to multilateration services and technologies and disseminate licenses among a wide variety of applicants by encouraging participation by all interested or qualified bidders...[and] recover for the public a portion of the value of the spectrum. R&O at 32-33.

The FCC has also said that competitive bidding will "award licenses to the parties who will provide service and use spectrum most efficiently."<sup>35/</sup>

24. Grandfathering, by contrast, allows unconstructed systems to insulate their spectrum assignments from auctions at least until April 1, 1996, the new deadline for completing construction. R&O at 35.<sup>36/</sup> In addition, the R&O empowers these licensees to request substantial amounts of additional spectrum for future needs. By allowing incumbents to arrogate these substantial quantities of spectrum, the R&O seriously diminishes the scope and benefits of the proposed LMS auctions. Stated differently, the inordinately generous grandfathering promulgated by the R&O deprives the FCC of what it would otherwise sell at auction. Spectrum that should be assigned to entities compelled to deploy that resource rapidly and economically (in order to earn a return) will instead remain with those that have repeatedly postponed construction and utilization of their grants. Thus, the grandfathering and auction proposals are mutually inconsistent.

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<sup>35/</sup> 2d R&O, 9 FCC Rcd at 2349.

<sup>36/</sup> 47 C.F.R. §90.363(d).

25. In addition, grandfathering unbuilt AVM licenses would give those licensees an advantage which the FCC has disallowed in similar situations.<sup>37/</sup> In Nationwide Wireless Network Corp.,<sup>38/</sup> the FCC retroactively required payment from PCS pioneer's preference recipients in order to avoid substantially distorting this market. According to that order:

a pioneer's preference recipient who receives a free license would likely enter the competitive marketplace with a significantly lower capital investment than the other licensees who bid and pay for their licenses. The difference would likely provide the pioneer's preference recipient with a substantial competitive advantage over its rivals...the entire bidding process may be distorted by awarding a pioneer's preference recipient with a free license. Parties who might otherwise bid may be discouraged from bidding 'top dollar' or from bidding at all because of their concerns over entering a new competitive market saddled with significantly greater capital costs that could place them at a competitive disadvantage.<sup>39/</sup>

An analogous situation exists here,<sup>40/</sup> the FCC has chosen to permit LMS auctions to be skewed by this spectrum windfall to incumbents. This only exacerbates the confusion and uncertainty which will surround the LMS competitive bidding process. Bidders will be less likely to bid the true value of the spectrum, and may be less likely to bid at all.

26. The Budget Act mandates that the FCC prevent the warehousing of spectrum.<sup>41/</sup>

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<sup>37/</sup> See, e.g., Inner City Broadcasting Corp., 9 FCC Rcd 1025, 1025-1026 (1994) ("Inner City") (where an applicant for extension of time to construct an MMDS station did not demonstrate diligent efforts to construct, it was warehousing spectrum in contravention of FCC policy and its extension application was denied), Nat'l Exchange Satellite, Inc., 7 FCC Rcd 1990, 1993 (1992) ("NES").

<sup>38/</sup> Mem. Op. and Order, 75 RR 2d 830 (1994).

<sup>39/</sup> Id. at 836-837.

<sup>40/</sup> SBMS Ex Parte Letters (Jan. 17, Jan. 19, 1995). Here, some of the recipients have not deployed a single mature LMS system, let alone demonstrated a pioneer's preference.

<sup>41/</sup> Warehousing is defined as where parties "apply for frequencies which they do not currently need to insure that they will have those frequencies later should they develop a need." Regulatory Policies and Procedures for the Domestic Public Land Mobile Radio Service, 89 FCC 2d 1199, 1202 (1982).

Congress requires that the FCC:

include performance requirements, such as appropriate deadlines and penalties for performance failures, to ensure prompt delivery of service to rural areas, to prevent stockpiling or warehousing of spectrum by licensees or permittees, and to promote investment in and rapid deployment of new technologies and services.<sup>42/</sup>

The FCC has consistently discouraged warehousing of spectrum in every radio service it regulates.<sup>43/</sup> Allowing unbuilt AVM licenses until April 1, 1996 to construct,<sup>44/</sup> combined with the opportunity to request additional virtually unlimited spectrum for future needs seriously undermines the Commission's longstanding anti-warehousing policy.<sup>45/</sup> Incredibly, the FCC has acknowledged that some licensees have no intention of ever building some of their licenses,<sup>46/</sup>

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<sup>42/</sup> 47 U.S.C. §309(j)(4)(B) (emphasis added).

<sup>43/</sup> Inner City, 9 FCC Rcd 1025 (citing Revision of Part 21, Notice of Proposed Rulemaking, 104 FCC 2d 116, 122-123 (1986)) ("Warehousing authorizations is not in the public interest. The public is best served when new services are brought on line as rapidly as possible. A carrier who is warehousing is preventing all other uses of that spectrum, resulting in the spectrum lying fallow."). See also Page America of New York, Inc., 8 FCC Rcd 4167, 4168 (1993); Yankee Microwave, Inc., Mem. Op. and Order, 7 FCC Rcd 3233, 3234-3235 (1992) ("spectrum may not be warehoused through numerous requests for extension of time to construct" because of FCC "rules and policies against the warehousing of spectrum"); NES, 7 FCC Rcd at 1991 ("warehousing could hinder the availability of services to the public at the earliest possible date by blocking entry by other entities willing and able to proceed immediately"); Radio Call Co., Inc., 6 FCC Rcd 351, 352 (1991).

<sup>44/</sup> R&O at 35.

<sup>45/</sup> In addition, this decision to encourage warehousing was made contrary to proper agency procedure. "When an agency changes its position, it must supply persuasive reasons for that change." Telecommunications Research and Action Ctr. v. FCC, 836 F.2d 1349, 1357-1358, n.19 (D.C. Cir. 1988) ("TRAC") ("an agency must supply a persuasively reasoned explanation for modifying its earlier position that is itself rationally grounded in the evidence before the agency." (emphasis added)). See MVMA, 463 U.S. at 42; Greater Boston Television Corp. v. FCC, 444 F.2d 841, 852 (D.C. Cir. 1970), cert. den., 403 U.S. 923 (1971), reh'g den. 406 U.S. 950 (1972) ("Greater Boston"). The FCC has not given any reasons why, despite Congress's specific statement against warehousing and its own longstanding policy against warehousing, it has chosen to reward warehousers, and even encourages continued warehousing.

<sup>46/</sup> R&O at 35, n.146 ("We note that Airtouch and Mobilevision have offered to limit the number of licenses they construct to 20 percent of the unbuilt licenses they hold. While we are

yet is allowing those licensees to retain their licenses and select which facilities to build. No valid justification has been, or can be, given for rewarding dilatory licensees who have no present intention of meeting their construction obligation.

B. The FCC Did Not Follow A Reasoned Approach In Adopting Grandfathering Provisions

27. In rulemaking, an agency is required to:

articulate with reasonable clarity its reasons for decision, and identify the significance of the crucial facts, a course that tends to assure that the agency's policies effectuate general standards, applied without unreasonable discrimination.<sup>47/</sup>

An agency must provide a reasoned basis for any position that it takes,<sup>48/</sup> yet the FCC did not do that. No reasons were given for the adoption of a grandfathering provision to protect unbuilt licenses even though such a provision is clearly contrary to longstanding policy against warehousing or for why some such licensees have been given the opportunity to request even more spectrum. The FCC did not give any reason for treating unbuilt licenses differently from pending applications nor did it cite to any evidence in the record supporting such a rule. "A rule without a stated reason is necessarily arbitrary and capricious."<sup>49/</sup> When adopting rules, an agency is required to "identify relevant factual evidence, to explain the logic and the policies underlying any legislative choice, to state candidly any assumptions on which it relies, and to

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not adopting this 20 percent limit, we expect all licensees to file modification applications only for those unbuilt licenses that realistically can be constructed by April 1, 1996.").

<sup>47/</sup> Greater Boston, 444 F.2d at 851.

<sup>48/</sup> TRAC, 836 F.2d at 1355.

<sup>49/</sup> Small Refiner, 705 F.2d at 551.

present its reasons for rejecting significant contrary evidence and argument."<sup>50/</sup> No evidence was identified, no comments referred to and no reasons were given for adoption of a grandfathering provision for unbuilt licenses and rejection of other suggested alternatives.<sup>51/</sup>

28. In another case where an agency arrived at a conclusion without stating any reason, the Supreme Court said:

[t]here are no findings and no analysis here to justify the choice made, no indication of the basis on which the [agency] exercised its expert discretion. We are not prepared to and the [APA] will not permit us to accept such...practice...Expert discretion is the lifeblood of the administrative process, but "unless we make the requirements for administrative action strict and demanding, expertise, the strength of modern government, can become a monster which rules with no practical limits on its discretion."...an agency must cogently explain why it has exercised its discretion in a given manner.<sup>52/</sup>

Here, the FCC presented no findings, did not justify its choice and gave no indication of why it adopted grandfathering provisions for unbuilt licenses. In fact, the only stated reason for adoption of grandfathering provisions related to "existing, operating multilateration AVM systems." R&O at 34. This reasoning, by its own terms, does not extend to unbuilt licenses.

29. An additional procedural defect exists because the FCC failed to respond to any of the comments submitted in relation to potential grandfathering rules. "An agency need not respond to every comment, but it must 'respond in a reasoned manner to the comments received, to explain how the agency resolved any significant problems raised by the comments, and to

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<sup>50/</sup> United Steelworkers of Amer. v. Marshall, 647 F.2d 1189, 1207 (D.C. Cir. 1980), cert. den., 453 U.S. 913 (1981). See also State Farm Mutual Auto. Ins. Co. v. DOT, 680 F.2d 206, 208 (D.C. Cir. 1982), vacated and remanded, 463 U.S. 29 (1983) ("An administrative agency...must comply with the legislative requirement that its decisions be reasoned").

<sup>51/</sup> For example, SBMS suggested limited grandfathering that would provide for "a very short transition period for existing systems and no transition period for unbuilt licenses." See, e.g., SBMS Letter to William F. Caton (Oct. 14, 1994), Attachment at 8.

<sup>52/</sup> MVMA, 463 U.S. at 48 (1983) ("MVMA") (quoting New York v. United States, 342 U.S. 882, 884 (dissenting opinion)) (emphasis in original).

show how that resolution led the agency to the ultimate rule."<sup>53/</sup> An agency is obligated to respond to the major comments received in a rulemaking proceeding,<sup>54/</sup> but the FCC did not. In fact, it completely ignored SBMS's many comments regarding the serious problems that would be raised if the FCC chose to grandfather unbuilt AVM licenses.<sup>55/</sup> "Comments standing unaddressed thus may well leave a reviewing court unable to say that the agency has considered all relevant matters."<sup>56/</sup> In view of the agency's total failure to consider the comments submitted, these provisions must be reconsidered.

C. If The Commission Insists On Grandfathering Unbuilt Licenses, It Must Permit Grandfathering Of Certain Applications

30. The Commission has chosen to grandfather licensed unbuilt AVM facilities, but not pending applications for new facilities. This is clearly discriminatory<sup>57/</sup> as the only difference is that the FCC has taken longer to grant the still pending applications. The Commission is required "at least to explain its different treatment...,"<sup>58/</sup> but it did not here. In SBMS' case, some of these applications have been pending since July 1994 and the FCC had projected grant dates for all of them for before February 3, 1995.<sup>59/</sup> The Commission's Consumer Assistance

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<sup>53/</sup> Action on Smoking and Health v. CAB, 699 F.2d 1209, 1216 (D.C. Cir. 1983)("ASH") (citing Rodway v. Dept. of Agric., 514 F.2d 809, 817 (D.C. Cir. 1975)).

<sup>54/</sup> ASH, 699 F.2d at 1219 (citing Alabama Power Co. v. Costle, 636 F.2d 323, 384 (D.C. Cir. 1979) ("Alabama Power"); see also TRAC, 836 F.2d at 1354-1355.

<sup>55/</sup> See, e.g., SBMS Letter to William F. Caton (Aug. 26, 1994), Attachment at 4; SBMS Letter to William F. Caton (Oct. 4, 1994), Attachment at 4.

<sup>56/</sup> Alabama Power, 636 F.2d at 385 (citations omitted).

<sup>57/</sup> Melody Music, Inc. v. FCC, 345 F.2d 730 (1965).

<sup>58/</sup> Id. at 732.

<sup>59/</sup> See Attachment 1 for list of pending applications.

branch informed SBMS that complete processing would take 113 days. Because of the FCC's delayed processing time, SBMS will not be entitled to grandfathering rights while those licensees who have admittedly not built licensed facilities will obtain grandfathering rights simply by filing applications to modify their unbuilt licenses. The only difference between the two situations is that one has chosen not to build, while the other has been waiting for Commission grant of a license. Otherwise, both have had plans to construct and operate AVM systems.

31. FCC rules require that where a document is published in the Federal Register, the FCC Record or Reports or Pike and Fischer Radio Regulation, it may be relied upon.<sup>60/</sup> If not so published, no person is expected to comply with it and it cannot be relied upon against a person.<sup>61/</sup> However, the FCC's decision to grandfather pending modification applications, while not grandfathering pending applications for new facilities clearly violates this rule. The FCC can not implement such a policy without using proper procedure and issuing a published decision.

#### VIII. The R&O Inadequately Explains "Permissible Use"

32. The R&O leaves open many issues relating to the permissible use of LMS systems. These unresolved issues make it difficult for potential licensees to fully understand the LMS service. First, the FCC has defined multilateration to include only systems which use "the difference of time of arrival" at three or more sites, R&O at 9, which excludes technology that uses "angle of arrival" at two or more sites. This latter technology seems to be multilateration even though excluded from the definition, and thus, the definition of multilateration should be clarified or expanded. Second, the FCC states that messaging must be "related to location or monitoring functions," R&O at 26, but it does not indicate how a licensee is supposed to restrict

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<sup>60/</sup> 47 C.F.R. §0.445(e).

<sup>61/</sup> Id.

the messages sent by the users of its system. Nor does it explain how "related to" will be defined, or how ancillary a use may be before it is no longer "related to" LMS. Without such explanation, the purposes of LMS, namely vehicle location and monitoring, could be eviscerated. Finally, while emergency real-time interconnection to the public switched network will be permitted, R&O at 16, the FCC has limited such communications to those related to a vehicle or passengers within a vehicle. This prohibits communications about other emergency situations which does not concern the vehicle or a passenger within the vehicle. This limited "emergency" exception could result in repeated violations of the rules through transmissions about accidents and other emergencies not concerning the vehicle or a passenger within the vehicle making the transmission. Clear definitions and standards regarding the permissible uses of LMS systems are necessary for bidders to accurately value LMS. Without knowing how the LMS license can be utilized, potential bidders will not what to bid or how to use the licenses.

IX. Emission Mask

33. The FCC's proposed out-of-band emission specification of 47 C.F.R. §90.209(m) is inappropriate and should be modified. The requirements as written could not be satisfied by SBMS or any of the other LMS providers. The proposed formula leads to required attenuation levels of 60 dB and greater immediately outside the allocated bandwidth, which represents a technical impossibility.

34. SBMS recommends an out-of-band specification based on existing requirements for digitally modulated transmissions. For the multilateration case, those requirements can be found in sections 21.106(a)(2) and 94.71(c)(2) for Domestic Fixed Radio Services and Private Fixed Microwave Services, respectively. The formulas given in those sections are based on a 4 kHz measurement bandwidth, however. Due to the variety of spectral line spacings in the different

LMS systems, a wider measurement bandwidth of 100 kHz is recommended. The wider measurement bandwidth implies an attenuation relaxation on the order of 14 dB. Also, the fact that the LMS systems generally have a much lower duty cycle than the fixed site systems should be taken into consideration and lead to further relaxation of the attenuation requirements.

35. The LMS forward links have a much narrower bandwidth and higher output power than the reverse links, so a more stringent attenuation requirement is appropriate. SBMS proposes emission limits similar to those for narrowband PCS.<sup>62/</sup>

36. Based on the above considerations, SBMS recommends that the following specification be adopted for Section 90.209(m), which has been agreed to by MobileVision, Teletrac and Pinpoint: for LMS multilateration emissions, operating in the 902-928 MHz band, in any 100 kHz band, the center frequency of which is removed from the center of the authorized sub-band(s) by more than 50 percent up to and including 250 percent of the authorized bandwidth. The mean power of emissions shall be attenuated below the maximum permitted output power,<sup>63/</sup> as specified by the following equation, but in no case less than 31 dB:

$$A=16+0.4(P-50)+10\log B(\text{attenuation greater than 66 dB is not required})$$

A=attenuation (in decibels below the maximum permitted output power level,

P=percent removed from the center of the authorized sub-band(s),

B=authorized bandwidth in MHz.

For the LMS high power narrowband forward link emissions, the power of any emission shall be attenuated below the transmitter power (P), in accordance with the following schedule: on any frequency outside the authorized sub-band and removed from the edge of the authorized

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<sup>62/</sup> See 47 C.F.R. §24.133(a)(1).

<sup>63/</sup> A maximum permitted output power of 30 W is assumed. Any variation in the permitted output power may require a modification to the equation.